**Chapter 10 – Plate Tectonics**

**Continental Drift**

1. The **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_** hypothesis – continents have moved slowly to their current locations.
2. All continents were once connected as one large landmass now called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. The land mass broke apart, and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ drifted to their present positions.
4. Evidence for continental drift:
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the continents
6. Similar \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ have been found on different continents.
7. Remains of warm-weather plants in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ areas and glacial deposits in \_\_\_\_\_\_\_\_\_\_\_\_ areas suggest that continents have moved. (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)
8. Similar \_\_\_\_\_\_\_\_\_\_\_\_ structures are found on different continents.

**Seafloor Spreading**

1. Using \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ waves, scientists discovered a system of underwater mountain ranges called the mid-ocean ridges in many oceans.
2. In the 1960’s, Harry Hess suggested the theory of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to explain the ridges.
3. Hot, less dense material below Earth’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rises upward to the surface at the mid-ocean ridges.
4. Then, it flows sideways, carrying the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ away from the ridge.
5. As the seafloor spreads apart, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ moves up and flows through the cracks, cools, and forms new seafloor.
6. Evidence for seafloor spreading:
7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rocks are located at mid-ocean ridges.
8. Reversals of Earth’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ field are recorded by rocks in strips parallel to ridges.



**Theory of Plate Tectonics**

1. Plate movements
2. Earth’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and upper mantle are broken into sections, called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, that move on a plastic-like layer of the mantle.
3. The plates and upper mantle form the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. The plastic like layer below the lithosphere is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

*Note: The theory of plate tectonics shows that sections of the seafloor and continents move around in relation to one another.*

* *It’s not just the continents or land masses that are moving like Wegener thought.*
1. Plate boundaries
2. **\_\_\_\_\_\_\_\_\_\_\_\_**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	1. Occur when 2 plates are moving \_\_\_\_\_\_\_\_\_\_\_\_\_ from one another.
	2. These forms rift valleys and increase seafloor surface area (creates new crust).
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	1. Plates moving \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		1. Denser plates sink under less \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ plates
		2. Newly formed hot \_\_\_\_\_\_\_\_\_\_\_\_\_\_ forced upward forms volcanic mountains.
	2. This type of movement causes a decrease in total crust area.
	3. Three types of convergent boundaries
		1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: When an oceanic and continental plate collide. The area where an oceanic plate descends into the upper mantle. Creates deep-sea trenches and volcanoes.
		2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: Occurs when two ocean plates collide, or when seafloor that has become denser due to cooling begins to skink. Deep-sea trenches form here. New magma rises and can create island arcs from volcanoes.
		3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: Usually no subduction occurs since both plates are less dense than the mantle layer below. The plates form mountain ranges and earthquakes can occur.
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	1. Occurs when two plates slide past one another and are moving either in opposite directions or in the same direction at different rates.
	2. Crust is not formed or destroyed
	3. Earthquakes often occur here. Ex: San Andreas Fault.
5. Plates collide
	1. Plates crumple up to form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ranges
	2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are common
6. Convection inside Earth – the cycle of heating, rising, cooling, and sinking of material inside Earth is thought to be the \_\_\_\_\_\_\_\_\_\_\_\_\_ behind plate tectonics.
7. Features caused by plate tectonics
8. Faults and \_\_\_\_\_\_\_\_\_\_ valleys
9. Mountains and \_\_\_\_\_\_\_\_\_\_\_\_\_
10. Strike-slip faults – cause of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. Testing for plate tectonics – scientists can measure \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as little as 1 cm per year.